

[0131] The sample arm probe may be a fiber optic probe that has an internally moving element, such that the motion is initiated at a proximal end of the probe and the motion is conveyed by a motion transducing arrangement (such as, but not limited to, wire, guidewire, speedometer cable, spring, optical fiber and the like) to the distal end. The fiber optic probe may be enclosed in a stationary sheath which is optically transparent where the light exits the probe at the distal end. Thus, scanning may also be accomplished by moving the optical fiber. For example, by rotating the optical fiber, or linearly translating the optical fiber. FIG. 10B shows an exemplary embodiment of the probe 359 which includes an inner cable 361360 (that may rotate or linearly translate along the axis of the probe), an outer transparent or semi-transparent sheath 362, distal optics 364, and remitted light 366 (which may be at any angle with respect to axis of catheter).